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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/902,995	Applicant(s) JAYANT ET AL.	
	Examiner Tung Vo	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 08 May 2007.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-51 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-51 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 11, 17-18, 25-27, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (US 6,025,880) in view of in view of Watkins (US 6,442,331).

Re claims 1 and 35, Nakagawa teaches a system for carrying out a method for calculating an optimum display size for a visual object (23 of fig. 2, and fig. 3) comprising the steps of compressing a visual object (fig. 4) with a visual object encoder (fig. 2); for

determining an encoding resolution for an input visual object prior to encoding (21 and 24 of fig. 1, Note the resolution conversion means (21 of fig. 1) and (24 of fig. 1) change resolutions, of a picture, on the basis of information of a resolution determined by the resolution determination means (23 of fig. 1); see also col. 2, lines 55-58);

a predetermined number of frames of visual object at encoding resolution (Note the changed resolution frame of visual object is encoded, fig. 2) comprising at least one video frame (30 frames/seconds; col. 6, lines 7-12), deriving a coding difficulty value (11, 12, 13, and 22 of fig. 2);

determining the optimum viewing display size (23 of fig. 1; col. 8, lines 5-13) for the encoded visual object (fig. 4) based on at least one of the coding difficulty value (22 of fig. 2) and an encoded visual object transmission rate (25 of fig. 2; Note the resolution determination means includes a monitoring facility for monitoring a buffer occupation ratio at which a buffer interposed between the encoding system and a transmission line is occupied. When the buffer occupation ratio detected by the monitoring facility is high, a lower resolution is selected. When the buffer occupation ratio is low, a higher resolution is selected; col. 3, lines 3, lines 5-10, and 61-67) thereby maximizing perceived quality of a displayed visual object (col. 4, lines 9-11, Note an appropriate amount of information (quality) to a transmission line to the display considered as maximum perceived quality of a displayed visual object); wherein the visual object comprises one of a graphical image and video (fig. 4); transmitting the visual object over a computer network (25 of fig. 2, Note a transmission line would obviously be considered as a computer network); wherein the visual object transmission rate comprises one or more values measured in units of information per unit of time (encoded video object of fames per second) and a speed at which binary digits are transmitted (encode video object are binary digits); wherein the video comprises one of a stored video and a live television signal (INPUT ORIGINAL PICTURE of fig. 2).

It is noted that Nakagawa further suggests that the resolution determination means includes a monitoring facility for monitoring a buffer occupation ratio at which a buffer interposed between the encoding system and a transmission line is occupied and resolutions can be changed even for the encoding method, so this is an evidence to one skill in the art to modify the encoder as taught by Nakagawa in figure 1.

However, Nakagawa does not particularly teach a decoder comprising a display size selector for determining the optimum viewing display size of encoded visual object as claimed.

Watkins teaches a decoder (14 of fig. 1) comprising a display size selector (30 of fig. 1) for determining the optimum viewing display size of encoded visual object (col. 3, lines 42-51; and col. 7, line 60-col.8, line 21).

Therefore, taking the teachings of Nakagawa and Watkins as a whole it would have been obvious to one of ordinary skill in the art to modify the teachings of Watkins into the system of Nakagawa in order to provide the output signal may be used to select the size and location of the window used for display of the object. Doing so would allow the system to display a quality image.

Note the applicant discloses an optimum display size can consider the quality of the display device, such as its resolution capabilities ([0076] of page 7 of US 2002/0028024) and the size of the display device.

Re claims 17-18 and 25-27, Nakagawa teaches a method for calculating an optimum display size for a visual object (23 of fig. 2, and fig. 3) comprising the steps of
Receiving an encoded visual object (13 of fig. 1), previously encoded at an encoding resolution (21 of fig. 1; Note an input picture conversion means for converting the input picture into a picture having a resolution determined by the resolution determination means; col. 2, lines 55-58)for a predetermined number of the encoded frames of visual object (30 frames/seconds; col. 6, lines 7-12), calculating a step size (12 of fig. 2); deriving a coding difficulty value as a function of step size (11, 12, 13, and 22 of fig. 2); determining the optimum display size (23 of fig. 1; col. 8, lines 5-13) for the visual object (fig. 4) based on at least one of the coding difficulty

value (22 of fig. 2) and a visual object transmission rate (25 of fig. 2); wherein the visual object comprises one of a graphical image and video (fig. 4); calculating step sizes for one of sets of frames of the visual object (30 frames per second), a sampling of frames of the visual object, and each frame of the visual object; wherein the step of calculating the step size further comprises the step of calculating the step size based upon a first transformation coefficient (11 of fig. 2); wherein the step of calculating the step size further comprises the step of calculating the step size based upon a second transformation coefficient (11 of fig. 2).

3. Claims 2-11, 15-16, 19-24, 31-34, 39, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (US 6,025,880) in view of Watkins (US 6,442,331) as applied to claims 1 and 35, and further in view of Lau et al. (US 6,681,043 B1).

Re claims 2-11, 15-16, 19-24, 31-34, 39, and 51, the combined Nakagawa and Watkins teaches the method for calculating an optimum display size for a visual object and wherein the step of displaying a message further comprises displaying a message with one of a cathode ray tube, a liquid crystal display, a light emitting diode display, and a projector (col. 3, lines 42-51, Watkins); a sampling of frames of the visual object (decoded object is displayed on OSD, fig. 1), and each frame of the visual object, the graphical image comprises one of a banner advertisement, a photograph, and a graphical object (textual message and graphical image data, col. 7, lines 35-42, Watkins); automatically displaying the visual object with the optimum display size (col.7, lines 55-60, Watkins); displaying the visual object with the optimum display size in response to a user command (30 of fig. 1).

It is noted that the combination of Nakagawa and Watkins does not particularly disclose transmitting the visual object over a wireless medium; one of radio frequency waves, infrared light waves, and a form of electromagnetic coupling; a form of payment as a requirement to encode the visual object as claimed.

However, Lau teaches the step of sampling of frames of the visual object, and each frame of the visual object (col. 3, lines 13-28; col. 8, line 40-col. 9, line 3); the graphical image comprises one of a banner advertisement, a photograph, and a graphical object (col. 5, lines 50-65; MPEG-4 standard); automatically displaying the visual object with the optimum display size (fig. 3); displaying the visual object with the optimum display size in response to a user command (fig. 3); wherein the step of displaying a message further comprises displaying a message with one of a cathode ray tube, a liquid crystal display, a light emitting diode display, and a projector (fig. 6); transmitting the visual object over a wireless medium; one of radio frequency waves, infrared light waves, and a form of electromagnetic coupling; a form of payment as a requirement to encode the visual object (34 of fig. 2; Note NETWORK I/F).

Therefore, taking the teachings of Nakagawa, Watkins, and Lau as a whole. It would have been obvious to one of ordinary skill in the art to incorporate the teachings of Lau into the method of the combination of Nakagawa and Watkins to allow the operator is able to visualize how peak signal to noise ratio varies between video objects over a sequence of frames or how the total number of bits affects the peak signal to noise ratio of each component of an object. When the image quality is unsatisfactory, these displays enable the operator to identify a parameter in need of adjusting to balance peak signal to noise ratio and the bit rate.

4. Claims 28 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (US 6,025,880) in view of Watkins (US 6,442,331) as applied to claim 17, and further in view of Lau et al. (US 6,681,043 B1) as applied to claim 35, and further in view of Keesman (US 5,805,224).

Re claims 28 and 36, the combination of Nakagawa, Watkins, and Lau does not particularly teach the step of calculating a mean value of the calculated step sizes an audio encoder and an audio/video system multiplexer as claimed.

However, Keesman teaches the step of calculating a mean value of the calculated step sizes an audio encoder and an audio/video system multiplexer (col. 1, lies 15-42).

Therefore, taking the teachings of Nakagawa, Watkins, Lau, and Keesman as a whole, it would have been obvious to one of ordinary skill in the art to incorporate the teachings of Keesman into the combination method of Nakagawa, Watkins, and Lau for the same purpose of calculating the step sizes. Doing so would provide the encoding method more efficiency.

5. Claims 13-14, 29-30, and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (US 6,025,880) in view of Watkins (US 6,442,331) as applied to claims 1, 17, and 35, and further in view of Rui (US 6,859,802 B1).

Re claims 13-14, 29-30, and 37-38; The combination of Nakagawa and Watkins does not particularly teach the step of determining the optimum display size for the visual object comprises the step of associating the coding difficulty value and a visual object transmission rate of the visual object with one or more empirically determined functions; and the step of

associating one of a plurality of empirically determined stair step functions with values indicating a relative size of visual object on display device as claimed.

However, Rui teaches the step of determining the optimum display size for the visual object comprises the step of associating the coding difficulty value and a visual object transmission rate of the visual object with one or more empirically determined functions (col. 9, lines 40-47); and the step of associating one of a plurality of empirically determined stair step functions with values indicating a relative size of visual object on display device (Note the empirically functions can be varied so that the stair step function is performed).

Therefore, taking the teachings of Nakagawa, Watkins, and Rui as a whole, it would have been obvious to one of ordinary skill in the art to incorporate the teachings of Rui into the combination of Nakagawa and Watkins for the same purpose of empirically determined the display size. Doing so would provide for improved image retrieval based on relevance feedback.

6. Claims 40-41, 43 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watkins (US 6,442,331) in view of Lau et al. (US 6,681,043).

Note the applicant discloses a optimum display size can consider the quality of the display device, such as its resolution capabilities ([0076] of page 7 of US 2002/0028024) and the size of the display device.

Re claims 40-41, 43 and 45-46, Watkins discloses a system for calculating an optimum viewing display size for a visual object (fig. 1; col. 3, lines 42-51) comprising: a decoder (14 of figs. 1 and 3) for decompressing an encoded visual object wherein the encoded visual object has been previously encoded at an encoding resolution (MPEG-2 standard would obviously have an encoding resolution as high resolution means quality image), for calculating a step size for a predetermined number of frames of the encoded visual object (according MPEG standard, a step size is used for encoding), for estimating a coding difficulty value as a function of step size (MPEG encoder, motion estimation determines difficulty); a display size selector (30 of fig. 1) for determining, at the decoder, an optimum viewing display size of the encoded visual object (col. 3, lines 42-51; and col. 7, line 60-col. 8, line 21) based on the estimated coding difficulty value (motion estimation) and an encoded visual object transmission rate (MPEG format, col. 4, lines 29-36, DVD format would obviously have frame rate); and a display device (34 of fig. 1) for displaying a message indicating the optimum viewing display size for the encoded visual object (col. 3, lines 47-51); a visual object render (28 of fig. 1) for generating the decompressed visual object; an audio decoder and an audio/video system de-multiplexer (the audio/video decoder as a multiplexer, 14 of figs. 1 and 3); wherein the visual object comprises one of a graphical image and video (col. 7, line 50-col. 8, line 21); the step of displaying a message indicating the optimum display size for the visual object (col. 8, lines 5-12).

It is noted that Watkins does not particularly discloses the decoder estimates a harmonic mean of a peak to noise ratio for a predetermined number of frames of the visual object as claimed.

However, Lau teaches a display device for displaying a message indicating the optimum display size for the encoded visual object; and estimates a harmonic mean of a peak to noise ratio for a predetermined number of frames of the visual object (fig. 6) and further suggests that various alternatives, modifications, and equivalents may be used (col. 12, lines 8-9).

Therefore, taking the teachings of Watkins and Lau as a whole. It would have been obvious to one of ordinary skill in the art to incorporate the teachings of Lau into the system of Watkins to allow the operator is able to visualize how peak signal to noise ratio varies between video objects over a sequence of frames or how the total number of bits affects the peak signal to noise ratio of each component of an object. When the image quality is unsatisfactory, these displays enable the operator to identify a parameter in need of adjusting to balance peak signal to noise ratio and the bit rate.

7. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watkins (US 6,442,331) in view of Lau et al. (US 6,681,043), and further in view of Keesman (US 5,805,224).

Re claim 42, the combination of Watkins and Lau does not particularly teach the step of calculating a mean value of the calculated step sizes an audio encoder and an audio/video system multiplexer as claimed.

However, Keesman teaches the step of calculating a mean value of the calculated step sizes an audio encoder and an audio/video system multiplexer (col. 1, lies 15-42).

Therefore, taking the teachings of Watkins, Lau, and Keesman as a whole, it would have been obvious to one of ordinary skill in the art to incorporate the teachings of Keesman into the

combination method of Watkins and Lau for the same purpose of calculating the step sizes. Doing so would provide the encoding method more efficiency.

8. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watkins (US 6,442,331) in view of Lau et al. (US 6,681,043), and further in view of Rui (US 6,859,802 B1)

Re claim 44, the combination of Watkins and Lau does not particularly teach the step of determining the optimum display size for the visual object comprises the step of associating the coding difficulty value and a visual object transmission rate of the visual object with one or more empirically determined functions as claimed.

However, Rui teaches the step of determining the optimum display size for the visual object comprises the step of associating the coding difficulty value and a visual object transmission rate of the visual object with one or more empirically determined functions (col. 9, lines 40-47)).

Therefore, taking the teachings of Watkins, Lau, and Rui as a whole, it would have been obvious to one of ordinary skill in the art to incorporate the teachings of Rui into the combination of Watkins and Lau for the same purpose of empirically determined the display size. Doing so would provide for improved image retrieval based on relevance feedback.

9. Claims 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watkins (US 6,442,331) in view of Nakagawa et al. (US 6,025,880).

Re claim 47-50, Watkins teaches a method for calculating an optimum viewing display size for a visual object comprising the steps of (fig. 1): compressing the visual object at the

encoding resolution with a visual object encoder wherein the visual object comprises at least one video frame (18 of fig. 1, Note encoding the video signal according the television format, which prefers to encoding resolution); determining the optimum viewing display size, at a decoder (14 and 30 of fig. 1; col. 3, lines 42-51; and col. 7, line 60-col. 8, line 21) based on the estimated coding difficulty value (motion estimation) and an encoded visual object transmission rate (MPEG format, col. 4, lines 29-36, DVD format would obviously have frame rate),for the encoded visual object based on at least one of a coding difficulty value and an encoded visual object transmission rate; and displaying a message indicating the optimum viewing display size for the encoded visual object thereby maximizing perceived quality in a displayed visual object(34 of fig. 1; col. 3, lines 47-51); wherein the step of determining an optimum display size further comprises the step of evaluating one of a quality of the display device and a size of the display device (col. 3, lines 42-51); the step of automatically displaying the visual object with the optimum display size (col. 7, lines 40-50) further comprising the step of displaying the visual object with the optimum display size in response to a user command (col. 8, lines 5-21); further comprising the step of displaying a message indicating the optimum display size for the encoded visual object (col. 7, lines 38-41).

It is noted that Watkins does not particularly disclose determining an encoding resolution for a visual object prior to compression as claimed.

However, Nakagawa teaches a system for carrying out a method for calculating an optimum display size for a visual object (23 of fig. 2, and fig. 3) comprising the steps of compressing a visual object (fig. 4) with a visual object encoder (fig. 2) for determining an encoding resolution for an input visual object prior to encoding (21 and 24 of fig. 1, Note the

resolution conversion means (21 of fig. 1) and (24 of fig. 1) change resolutions, of a picture, on the basis of information of a resolution determined by the resolution determination means (23 of fig. 1); see also col. 2, lines 55-58).

Therefore, taking the teachings of Watkins and Nakagawa as whole, it would have been obvious to one of ordinary skill in the art to modify the teachings of Nakagawa into the method of Watkins to provide encoding a picture that makes a natural motion while preventing deterioration of picture quality by changing the resolution of an original picture input that is an object of encoding, by using an appropriate criterion.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Vo whose telephone number is 571-272-7340. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tung Vo
Primary Examiner
Art Unit 2621